

## BENCH TOP GRILL ASSEMBLY

### PRIORITY CLAIM

5 This application claims priority in part from U.S. App. Ser. No. 10/428,621, filed May 2, 2003, now issued as U.S. Pat. No. 6,701,912, on March 9, 2004, and incorporates the contents of the same by reference herein.

### BACKGROUND OF THE INVENTION

#### 1. Field of the Invention

10 The present invention relates to grills. More specifically, the present invention relates to a bench top grill assembly with a heating unit in a grill body. A support member spaces the grill body and the heating unit from a support surface improving safety and ease of use.

#### 2. Description of the Related Art

15 Many conventional types of grills exist. Most conventional grills are suitable for only outdoor grilling and require the use of an external fuel source such as wood, barbecue chips, charcoal, or sterno/petroleum-type fuels. Common conventional grills employ a horizontal grilling surface supporting the items to be grilled positioned above a heat source. One common example of this type of conventional grill is the Webber® One Touch Grill®.

20 Another type of conventional warming apparatus employs a solid/semi-solid

fuel canister in a wire frame under a pan to be heated. This design allows flames and thermal energy issuing from a lit fuel canister to rise under the pan and warm the contents. This design is inexpensive to manufacture but is unstable with heavy pans. This design also allows for cross winds to effect the fuel canister and redirect the thermal energy, risking fire hazards, heating of the wire frame, and damage to surrounding objects.

This type of wire frame design also makes it difficult to access the hot fuel canister for replacement. As the fuel canister is retained under the pan, the safest access would be to remove the pan causing additional inconvenience and risk of spilling. If the fuel canister is accessed from the side, a special tool is required to grip the hot canister body and lift it from its retaining wire cradle, risking spilling of the now-liquid fuel mixture.

Alternative conventional embodiments have expanded on the above common themes by adding multiple fuel canisters, replacing the wire frame with differently shaped wire elements, designs incorporating stamped and folded metal, and a multitude of collapsible designs for camping and recreation. Some of these conventional designs provide a grilling rack suspended over the fuel canister to support a pan or other items-to-be heated.

Unfortunately, each of these conventional designs retains many of the detriments noted above. For example, each of these conventional designs allows multiple side access to the separate fuel container, or requires direct contact with the fuel container during replacement and transport. These conventional designs are also not suitably adapted for both direct grilling without a grilling rack and an easily replaceable grill rack.

Conventional designs also fail to provide for user convenience in many ways. Since grilling operations may involve the use of forks or skewers, it would be

convenient for conventional designs to provide easy storage for these utensils. Additionally, since conventional grilling operations use condiments such as those described in Applicant's application, U.S. Ser. No. 10/428,621 including meats (steak, chicken, fish, shrimp etc), fruits and vegetables (pepper, squash, corn, pineapple etc.), and snack foods (marshmallows, breads, s'mores etc.)

Unfortunately, the benefits of open flame grilling are often unavailable in a home or at a restaurant table. Consequently, the present assignee has invented a portable Bench Top Grill Assembly employing a heating unit centrally supported in a portable grill body, described in U.S. Ser. No. 10/428,621. In this design, a removable grill is supported above the heating unit. The Bench Top Grill allows a user to grill items either directly on the grill, or having removed the grill, over the open flame-type heating unit. In this manner, the invention enables an indoor grilling operation in a safe and convenient manner. Unfortunately, a user's convenience for utensil and condiment storage remains un-optimized and a revised design providing improvements in both features is necessary.

In sum it is suggested, that the disadvantages of the known grilling mechanisms include:

1. A difficult to clean support member for a bench top grill making sterilization and sanitization difficult within the confines of a consumer's household kitchen.
2. A support member requiring substantial hand labor to manufacture through carving or other costly multi-step manufacturing processes.
3. A support member and grill body member that readily transmit thermal energy and increase a consumer's safety risk.
4. A grilling assembly that is not maximized to a user's convenience.

## OBJECTS AND SUMMARY OF THE INVENTION

It is an object of the present invention to provide a bench top grill that overcomes at least one of the detriments noted in the related art.

5 The present invention relates to a bench top grill assembly that includes at least a grilling body supporting a grill above a burner unit. A support member provides additional stability and includes a plurality of recesses or receptacles for the grilling body and for on-board storage of utensils, condiments, or containers or other items improving convenience. In one embodiment, the grilling body is a ceramic material and the support member is formed from a non-flammable material; in  
10 combination offering improved consumer safety. In another embodiment, a handle projects outwardly from the burner unit enabling a user to grip the tip of the handle and manipulate the unit during use.

According to one embodiment of the present invention, there is provided a bench top grill kit, comprising: means for securing a heat source generally within a grill body element; a grate in the grill body element; the grate removably positioned  
15 above the heat source within a path of grilling heat rising upwardly from the heat source; a support member thermally spacing the grill body element from a supporting work surface, thereby minimizing a heating of the work surface during the grilling use; and a plurality of utensils for securing and holding a food item within the path of upwardly rising grilling heat.  
20

According to another embodiment of the present invention, there is provided a bench top grill kit, wherein: the support member further comprises an outer wall portion projecting upwardly from the support surface to an outer rim portion and defining therein an inner volume having an receiving surface, and at least one raised

portion on the support member projecting upwardly from the receiving surface effective to define at least one receptacle therein.

According to another embodiment of the present invention, there is provided a bench top grill kit, wherein: the at least one receptacle shaped to receive at least one of the plurality of utensils, at least one food product, at least one food product container, and the grill body element, whereby the at least one receptacle minimizes a shifting of the one relative to the support member during the grilling use and a transport thereby improving a safety of the bench top grill kit.

According to another embodiment of the present invention, there is provided a bench top grill kit, wherein: the heat source further comprises a fuel container effective to contain an external fuel element while allowing a flame to escape through a flame opening proximate the grate during a grilling use, and the fuel container further comprising at least a handle extending outwardly from the fuel container, whereby the handle minimizes an outwardly thermal transfer of the grilling heat to a tip region of the handle and enables a safe manipulation of the heat source during a grilling use.

According to another embodiment of the present invention, there is provided a bench top grill kit, wherein: the support member being at least one of a rotatable support member and a fixed support member.

According to another embodiment of the present invention, there is provided a bench top grill kit, further comprising: at least one receptacle on the support member.

According to another embodiment of the present invention, there is provided a bench top grill kit, wherein: the at least one receptacle shaped to receive at least one of the plurality of utensils, at least one food product, at least one food product container, and the grill body element, the at least one recess minimizing a shifting of

the one relative to the support member during the grilling use and a transport, thereby improving a safety of the bench top grill kit is increased.

According to another embodiment of the present invention, there is provided a bench top grill kit, wherein: the fuel container further comprises means for regulation of a combustion of the flame from the external fuel element.

According to another embodiment of the present invention, there is provided a bench top grill kit, wherein: the means for regulation includes a plurality of combustion air ports proximate the flame opening adjustable through a movement of the handle relative to the fuel container.

According to another embodiment of the present invention, there is provided a bench top grill kit, wherein: the support member is a ceramic support member, whereby the ceramic support member is effective to minimize the thermal transfer to the supporting work surface.

According to another embodiment of the present invention, there is provided a bench top grill kit, wherein: the means for securing a heat source includes a grill body, and the grill body being a ceramic grill body, whereby the ceramic grill body is effective to additionally minimize the thermal transfer to the supporting work surface.

According to another embodiment of the present invention, there is provided a bench top grill kit, further comprising: at least one condiment container for containing the food item, and the condiment container being at least one of a wood, a metal, a plastic, a glass, and a ceramic condiment container.

According to another embodiment of the present invention, there is provided a bench top grill kit, wherein: the means for securing a heat source includes a grill body, and at least one of the grill body and the support member being a ceramic member, whereby the at least one ceramic body minimizes a thermal transfer to the

supporting work surface.

According to another embodiment of the present invention, there is provided a bench top grill kit, further comprising: at least one condiment container for containing the food item prior to or after a grilling of the food item, and the  
5 condiment container being at least one of a wood, a metal, a plastic, a glass, and a ceramic condiment container.

According to another embodiment of the present invention, there is provided a bench top grill kit, wherein: the means for securing a heat source includes a grill body, the grill kit further comprises at least one condiment container for containing  
10 the food item prior to or after a grilling of the food item, and at least one of the grill body, the support member, and the condiment container being a ceramic member.

According to another embodiment of the present invention, there is provided a bench top grill kit, comprising: means for securing a heat source generally centrally within a grill body element, a grate spanning an opening in the grill body element, the  
15 grate positioned above the heat source within a path of grilling heat rising upwardly from the heat source, at least one utensil for securing and holding a food product above the grate within the path of upwardly rising grilling heat, a support table member thermally spacing the grill body element from a supporting work surface, thereby minimizing a heating of the work surface during a grilling use, and the  
20 support table being at least one of a rotatable support table and a fixed support table.

According to another embodiment of the present invention, there is provided a bench top grill kit, wherein: the means for securing includes a fuel container effective to contain an external fuel element while allowing a flame to escape through a flame opening proximate the opening in the grill body element when the fuel  
25 element is in the fuel container.

According to another embodiment of the present invention, there is provided

a bench top grill kit, wherein: the support table member further comprises an outer wall portion projecting upwardly from the support surface to an outer rim portion and defining therein an inner volume having an receiving surface, and at least one raised portion on the support member projecting upwardly from the receiving surface effective to define at least one receptacle therein.

According to another embodiment of the present invention, there is provided a bench top grill kit, wherein: the at least one receptacle shaped to receive at least one of the at least one utensil, the at least one food product, at least one food product container, and a portion of the grill body element, the at least one receptacle effective to minimize a shifting of the one relative to the support table member during the grilling use and a transport, thereby improving a safety of the bench top grill kit is increased.

According to another embodiment of the present invention, there is provided a bench top grill kit, wherein: at least one of the grill body element and the support table member is a ceramic member.

According to another embodiment of the present invention, there is provided a bench top grill kit, wherein: further comprising: at least one food product container for containing the food product prior to or after the grilling use, and at least one of the grill body element, the support table member, and the food product container is a ceramic member.

According to another embodiment of the present invention, there is provided a bench top grill kit, wherein: both the grill body element and the support table member are ceramic members.

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According to another embodiment of the present invention, there is provided a bench top grill assembly, comprising: a grill body, the grill body being a rigid body defining an inner region and a top opening opposite an inner support means for supporting a means for grilling, at least a side opening in the grill body positioned  
5 between the top opening and the inner support means, a grill grate, the grill grate providing a divided access to the inner region of the grill body, the grill grate removably positionable on the top opening and separable from the grill body during a use, whereby the top opening and the grill grate enable grilling over at least one of an open flame and a grated flame, a fuel container in the means for grilling, the fuel  
10 container operably capable of containing an external fuel element while allowing a flame to escape through a flame opening proximate the top opening when the fuel container is supported by the inner support means, a support member spacing the grill body from a supporting work surface, thereby minimizing a heating of the work surface during a use, and the support member being at least one of a rotatable support  
15 member and a fixed support member relative to the work surface.

According to another embodiment of the present invention, there is provided a bench top grill assembly, further comprising: a handle extending from the fuel container, and the handle projecting through the side opening away from the grill body during the use, whereby the handle does not become heated and is easily  
20 grasped during a use to facilitate a safe operation of the bench top grill.

According to another embodiment of the present invention, there is provided a bench top grill assembly, wherein: the grill body and the support member are substantially formed from a ceramic material, thereby minimizing the thermal transfer to the work surface during the use.

25 According to another embodiment of the present invention, there is provided a bench top grill assembly, further comprising: the fuel container includes at least one

means for adjusting a fuel combustion in the fuel container during or after the use.

According to another embodiment of the present invention, there is provided a bench top grill assembly, comprising: a grill body, the grill body being a rigid continuous body substantially bounding an inner volume and defining at least a top opening opposite an inner bottom surface, means for producing thermal energy in the grill body, a grill grate on the top opening and separable from the grill body and enabling a divided outwardly flow of the thermal energy from the means for producing through the top opening, a support member spacing the grill body from an external work surface, the support member is at least one of a rotatable support table and a fixed support table, the support member further comprising an outer wall portion projecting upwardly from the support surface to an outer rim portion and defining therein an inner volume having an receiving surface, and at least one raised portion on the support member projecting upwardly from the receiving surface effective to define at least one receptacle therein.

According to another embodiment of the present invention, there is provided a bench top grill assembly, wherein: the at least one receptacle is shaped to receive at least one of the plurality of utensils, at least one food product, at least one food product container, and the grill body element, the at least one recess minimizing a shifting of the one relative to the support member during the grilling use and a transport, thereby improving a safety of the bench top grill kit is increased.

According to another embodiment of the present invention, there is provided a bench top grill assembly, comprising: a grill body, the grill body being a rigid body defining a centrally positioned support portion for supporting a means for producing thermal energy in the grill body, a grill grate removably positioned on the grill body for enabling a divided outwardly flow of the thermal energy from the means for producing through a top portion of the grill body, a support member spacing at least

the grill body from an external work surface, the means for producing thermal energy including a handle element, whereby the means for producing enables a safe upwardly direction of the thermal energy during a use while the handle element provides a simple means for grasping the means for producing prior to or after the use, and at least one utensil for suspending an item to be grilled within the outwardly flow of the thermal energy thereby enabling a grilling of the item.

According to another embodiment of the present invention, there is provided a bench top grill assembly, wherein: the support member further comprises an outer wall portion projecting upwardly from the support surface to an outer rim portion and defining therein an inner volume having an receiving surface, and at least one raised portion on the support member projecting upwardly from the receiving surface effective to define at least one receptacle therein.

According to another embodiment of the present invention, there is provided a bench top grill assembly, wherein: the at least one receptacle is shaped to receive at least one of the at least one utensil, at least one food product, at least one food product container, and the grill body element, the at least one receptacle minimizing a shifting of the one relative to the support member during the grilling use and a transport, thereby improving a safety of the bench top grill kit is increased.

According to another embodiment of the present invention, there is provided a bench top grill assembly, wherein: the support member is at least one of a generally cylindraceous shape and a rectilinear shape along an outer periphery.

According to another embodiment of the present invention, there is provided a bench top grill assembly, wherein: the grill body is formed as at least one of a frusto-conical shape, a pot-bellied shape, and a pseudo-frustum shape, each the shape effective to bound the centrally positioned support portion, and receive the means for providing thermal energy.

According to another embodiment of the present invention, there is provided a bench top grill assembly, comprising: a ceramic grill body, the grill body being a rigid continuous body bounding an inner volume and defining at least a top opening opposite an inner bottom surface, one side of the grill body having at least a side opening arrayed along a plane positioned substantially perpendicular to the top opening and the inner bottom surface, a grill grate, the grill grate providing a divided access to an inside of the grill body, a grill grate removably positional on the top opening and separable from the grill body during a use, whereby the top opening and the grill grate enable grilling over at least one of an open flame and a grated flame, a fuel container, the fuel container operably capable of containing an external fuel element while allowing a flame to escape through a flame opening proximate the top opening when the fuel container is inserted in the bounded inner volume, a handle extending from the fuel container, and the handle projecting through the side opening away from the grill body during the use, whereby the handle does not become heated and is easily grasped and facilitates a safe removal of the fuel container from the grill body after a use.

According to another embodiment of the present invention, there is provided a bench top grill assembly, wherein: the grill body is formed as at least one of a frusto-conical shape, a pot-bellied shape, a cylindraceum shape and a pseudo-frustum shape, each the shape effective to bound the inner volume during the use.

According to another embodiment of the present invention there is a bench top grill assembly, in combination with: a support table, and the support table being constructed from a ceramic material.

The above, and other objects, features and advantages of the present invention will become apparent from the following description read in conjunction with the accompanying drawings, in which like reference numerals designate the same elements.

## 5 BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a top view of a first embodiment of the present invention.

Fig. 2 is a side view of the embodiment shown in Fig. 1.

Fig. 3 is a top view of one embodiment of a grill body according to the present invention.

10 Fig. 3A is a partially cut away side view of the grill body in Fig. 3.

Fig. 3B is a right side view of the grill embodiment shown in Fig. 3.

Fig. 4 is a top view of a support member according to the first embodiment of the present invention.

Fig. 5 is a side view of the support member shown in Fig. 4.

15 Fig. 6 is a sectional view of Fig. 4 along line II-II.

Fig. 7 is a sectional view of Fig. 4 along line III-III.

Fig. 8 is a partial view of Fig. 4 along line IV-IV.

Fig. 9 is a bottom view of the support member shown in Fig. 4.

20 Fig. 10A is a top view of a utensil according to one embodiment of the present invention.

Fig. 10B is a side view of the utensil shown in Fig. 10A.

Fig. 11 is a top view of a second embodiment of the present invention.

Fig. 12 is a side view of the embodiment shown in Fig. 11.

Fig. 13 is a top view of a support member according to the second

embodiment of the present invention.

Fig. 14 is a side view of the support member shown in Fig. 13.

Fig. 15 is a sectional view of Fig. 13 along line V-V.

Fig. 16 is a sectional view of Fig. 13 along line VI-VI.

5 Fig. 17 is a partial view of Fig. 13 along line VII-VII.

Fig. 18 is a bottom view of the support member shown in Fig. 13.

Fig. 19 is a partial view of Fig. 18 along line VIII-VIII.

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

10 In addressing at least one of the issues noted above, embodiments of the present invention provide a bench top grill assembly, as will be described.

Referring to Figs. 1 through 3B a first embodiment of a bench top grill assembly 1 includes a support member or a support plate 2 having a rim 2A supporting a grill body 3 and housing a universal burner unit 4 between a supporting member 10B and a grill grate 8.

15 Grill body 3 includes a top opening 7 opposite supporting member 10B and at least one side opening 6 positioned generally along at least one side of grill body 3, providing a lateral access to an adjusting handle member 4C of universal burner unit 4. Since handle member 4C projects laterally away from supporting member 10B and outwardly through opening 6, handle 4C remains cool during use, and  
20 enables the convenient ability to adjustably position or, optionally, adjust a combustion or combustion rate (as will be described), and improve a user's safety.

Opening 6 is shown arranged on one side of grill body 3 along a plane generally perpendicular to planes of both top opening 7 and an inner support surface 10B, as shown. Alternative embodiments are envisioned providing alternative

designs for opening 6, including positioning opening 6 differently depending upon the shape of grill body 3.

While the present embodiment envisions forming opening 6 of a size capable of removably receiving universal burner unit 4, this is not critical for the present invention, and alternative designs are envisioned allowing only the manipulation of burner unit 4 via handle 4C.

In the embodiment shown, handle 4C projects outwardly and allows easy insertion, withdrawal, and repositioning during use as both a convenience and a safety feature.

Of principal importance of allowing handle 4C to project outwardly through opening 6 is to allow a cool manipulation of an adjustment portion (not shown) on top 4B of burner unit 4. The adjustment portion may optionally include safety features such as holes or slits (not shown) and pivot and regulate air access to the interior of burner unit 4. As a further safety feature, the adjustment portion may also include an integrated or separate lid (not shown) capable of ending combustion within burner unit 4.

An outer periphery of grill grate 8 rests within a grill rim 9B formed proximate top opening 7 on grill protuberances 9 projecting inwardly proximate grill rim 9B and top opening 7. A plurality of support feet 5 space support plate 2 from a support surface and minimize thermal transfer and damage to the support surface. It is envisioned that the present grill body 3 may be incorporated with or sold with a rigid or a rotational base or support 2 (as shown) without departing from the scope of the present invention.

Grill grate 8 is removably positional on grill rim 9B and may be either a substantially circular grill grate (as shown) or an alternative shape adapted to an alternative shape for grill body 3. In one example, where grill body 3 is a rectilinear

body having a corresponding rectilinear top opening, grill grate 8 may be similarly adapted to the rectilinear design without departing from the scope and spirit of the present invention. Grill grate 8 may alternatively include small outer lip portions to engage protuberances 9 and includes a plurality of slots or openings, in a variety of patterns. Grate 8 functions to allow heat and potentially flame rising from universal unit 4 to extend above top opening 7 for grilling, roasting, or warming.

A plurality of centering or supporting ribs or members 10 is positioned proximate to support member 10B and function to support a bottom member 4A of burner unit 4. In use, bottom member 4A rests on and engages supporting members 10 about a periphery of bottom member 4. In an alternative embodiment of the present invention, supporting ribs or members 10 may be sloped or otherwise shaped and adapted to aid centering burner unit 4 in grill body 3 and may additionally be formed to provide a snug and rattle-free retention of burner unit 4 further improving safety.

While supporting ribs or members 10 are not required to achieve the entire goals of the present invention, members 10 may be additionally and adaptively formed to project inwardly and therefore provide an air-gap layer between a bottom surface of bottom member 4A and the top surface of support member 10B. The benefit of this particular embodiment is that the additional air-gap layer minimizes thermal transfer, further improving user safety.

Support member 2 is positioned below grill body 3 as shown, and includes a bottom surface 12 spaced from a support surface by a plurality of feet members 5. A top surface of support member 2 functions as a receiving surface 11 for supporting grill body 3 as well as a other optionally included condiments (grilling items, drinks, napkins etc.) or utensils (grilling utensils).

It is also envisioned, that the external surface of the assembly 1, grill body 3



and support member 2 may be shaped or molded into various pleasing forms in various colors, for example to replicate a brick/stone pattern, a floral pattern, a culturally selected pattern such as a Chinese-type grill or an South-Asian-type grill, or other desired form, depending upon a manufacturers' determination. It is also  
5 envisioned, that the external surface of main body 3 may optionally include additional receptacles, drawers, sliding trays, vent slots, or means for containing items to be grilled, utensils or utensil containers and prevent them from shifting. Grill body 3 may also include gripping surfaces for lifting as an additional safety feature.

10 In the embodiment shown, support plate member 2 and grill body 3 are constructed from a ceramic material in a glazed or unglazed configuration. However, it is envisioned that support plate member 2 and grill body 3 may be constructed from a variety of materials without departing from the scope and spirit of the present invention.

15 For example, while ceramics provide excellent thermal transfer resistance, the grill body and plate may be made from a selected thermoplastic enabling the desired ease of cleaning and movement while facilitating simple manufacture, color selection and determination. Alternatively, grill body 3 and support member 2 may be optionally constructed from a variety of materials including painted, enameled, or  
20 anodized metals, composite materials and other materials commonly used in the manufacture of rigid-shaped consumer products so long as the principals of safe and relatively simple construction are maintained. In this manner, the present invention secures consumer safety while ensuring a relatively low manufacturing cost.

25 Referring now to Figs. 4 through 8, raised portions or surfaces 14 are formed and extend upward or project outwardly, from the region of a grill receptacle 13. Grill receptacle 13 is shaped as a recess for securing a bottom portion of grill body

3 from lateral shifting and may be readily adapted during manufacture to a variety of shapes capable of receiving adaptively shaped grill bodies 3. For example, where a rectilinear grill body 3 is employed, grill receptacle 13 is shaped in a rectilinear manner. As a second embodiment, where grill body 3 is formed as a generally frusto-conical shape, with a generally smaller bottom and a generally larger top, grill receptacle 13 would be correspondingly adapted to this shape.

Raised portions 14 project from receiving surface 11 of support member 2 and, in selected regions project forming a raised portion 16 having raised extensions 16A, 16B, 16C, and 16D (as shown) projecting outwardly, effective to generally divide receiving surface 11 into a corresponding plurality of receptacles 17A, 17B, 17C, and 17D.

In the present embodiment, raised extensions 16A-16D form generally two elongated receptacles 17B, 17D and two other receptacles 17A, 17C of a generally shorter nature, as shown. One benefit of the present positioning is that weight of assembly 1 is centered for easy lifting and rotation as will be described. As will be discussed, alternative embodiments include rotating and non-rotating supports, supports without feet, supports without receptacles or other adaptations depending upon consumer and manufacturer demand.

Recesses 5B, are formed on bottom surface 12 and are shaped to receive a respective plurality of feet 5 during assembly. Recesses 5B provide a positive contact with feet 5 and operate in conjunction with feet 5 to protect assembly 1 and space assembly 1 and support plate member 2 from a support surface, further minimizing thermal transfer.

In the embodiment shown, support member 2 is slip cast from a ceramic material forming recesses 15, 15 corresponding to raised surface 14, after processing. Recesses 15, 15 function to maintain a generally similar wall thickness through

support member 2 and consequently minimize drying and firing losses during manufacture.

Those skilled in the art of plastic forming, ceramic slip casting, dry pressing, wood carving or metal forming will readily recognize that the present design for support member 2 may be easily adapted to and readily include different designs for receptacles 17A-17D, raised portions 16A-16D, and other features discussed herein depending upon a manufacturer's or consumer's needs.

The present design for support member 2 may be adapted to contain or support a wide variety of cooking, grilling, and/or cleaning utensils, drink glasses and food items (noted above) or even adaptively shaped food or condiment containers. For example, receptacles for elongated containers for utensils or chocolate bars, and rounded containers for marshmallows, vegetables, meats or other food items may be formed. Receptacles 17A-17D and 13 are shaped to prevent a shifting of a received item relative to support plate body 2 during use or transport, and thereby improve a safety of assembly 1. For example, receptacle 13 prevents grill body 3 from shifting during transport and tipping universal burner unit 4, preventing possible burns and property damage.

It is also envisioned that support member 2 may be optionally fixed and capable of rotation relative to a support surface. Where support member 2 is fixed, feet 5 contact the support surface for safety. Where support member 2 rotates, a race and bearing set or other rotating member (all not shown) spaces support member 2 from the support surface allowing easy rotation relative to a support surface and use by a large number of consumers.

During operation and use, universal burner unit 4 is positioned by handle 4C via side opening 6 into receiving bottom surface 10B, with optional centering and support members 10 operating as a support means. When support member 2 is

rotated or shifted to another location, guiding receptacle 13, receiving bottom surface 10B, support members 10, and elements of grill body 3 function together as a safety means for preventing tipping while not interfering with operation and use of burner unit 4. Support members 10 and bottom surface 10B, and the shape of burner unit 4 (round/square etc.), all function as a means for helping to center burner unit 4 proximately below grill grate 8.

Referring now to Figs. 9, 10A, and 10B, feet 5 are positioned generally about an outer periphery of bottom surface 12 of support member 2. Bottom recesses 15, 15 are shown and are effective to generally minimize the difference in materials thickness in the present ceramic embodiment. As noted above, alternative embodiments may eliminate or modify bottom recesses 15, 15 without departing from the scope and spirit of the present invention, thereby easily enabling adaptive manufacturing.

A utensil 18 includes a shaft 20 spacing a handle end 21 from a tip end 19. During use, one or more utensils 18 are used to support an item to be grilled over grill body 3 in the upwardly rising thermal heat path from universal burner 4. While the present assembly 1 envisions inclusion of at least one utensil 18, alternative embodiments are envisioned where a plurality of utensils 18 are included or no utensils 18 are included, depending upon consumer and manufacturer needs.

While the present embodiment provides pointed tip ends 19, alternative embodiments are proposed enabling the use of grilling baskets or grilling grippers for unusually shaped or slippery items to be grilled. For example, those skilled in the art will recognize that without departing from the essence of the present invention, utensil 18 may alternatively have a caged end (not shown) for capturing and containing items difficult to penetrate with tines (e.g., chestnuts, cauliflower heads, acorns etc.) or small items more easily grilled in a caged end (for example, peanuts,

walnuts, etc.), or even types of shrimp, clams, muscles, scallops, and fish.

Referring now to Figs. 11 through 19 an alternative embodiment of the present invention includes a bench top grilling assembly 100 includes a support member or a support plate 102 having a rim 102A supporting a grill body 103 housing a universal burner unit 104 between an inner supporting member (not shown) and a grill grate 108.

Grill body 103 includes a top opening 107 opposite the supporting member and at least one side opening 106 positioned generally along at least one side of grill body 103 and providing a lateral access to an adjusting handle member 104C of universal burner unit 104. Since handle member 104C projects laterally away from the supporting member and out opening 106, handle 104C remains cool during use, and enables the convenient ability to adjustably position, or optionally adjust a combustion or combustion rate (as will be described), thereby improving operation and user safety.

Opening 106 is shown arranged on one side of grill body 103 along a plane generally perpendicular to planes of both top opening 107 and the inner support surface (not). As noted above, alternative embodiments are envisioned providing alternative designs for opening 106, including positioning opening 106 differently depending upon the shape of grill body 103.

While the present embodiment envisions forming opening 106 in a size capable of removably receiving universal burner unit 104, this is not mandated by the present invention, and alternative designs are envisioned allowing only the manipulation of burner unit 104 via handle 104C.

In the embodiment shown, handle 104C projects outwardly and allows easy insertion, withdrawal, and repositioning during use, as both a convenience and a safety feature. While burner unit 104 operates generally as a fuel container, it is not

essential to the present invention to allow the immediate removal of burner unit 104 from grill body 103 during use, and grill body 103 may be modified to provide for the upwardly or outward removal of burner unit 104 only after cooling and further disassembly of bench top grill assembly 100.

5           Of many, one principal importance of allowing handle 104C to project outwardly through opening 106 is to allow a cool manipulation of an optional adjustment portion (not shown) on top 104B of burner unit 104. The adjustment portion may optionally include safety features such as holes or slits (not shown) and pivot and regulate air access to the interior of burner unit 4. As a further safety  
10       feature, the adjustment portion may also include a lid (not shown), fixably positioned or provided removably as a cap, capable of cutting off combustion within burner unit 104.

          An outer periphery of grill grate 108 rests within a grill rim (not shown) formed proximate top opening 107, in a manner similar to that described above. A  
15       plurality of support feet 105 space support plate 1022 from a support surface and minimize thermal transfer and damage to the support surface. It is envisioned that the present grill 100 may be incorporated with or sold with a rigid or a rotational base or support 102 without departing from the scope of the present invention.

          Grill grate 108 is removably positional on the grill rim, and may be either a  
20       substantially circular grill grate (as shown) or an alternative shape adapted to an alternative shape for grill body 103. In one example, where grill body 103 is a rectilinear body having a corresponding rectilinear top opening, grill grate 108 may be similarly adapted to the rectilinear design without departing from the scope and spirit of the present invention. Grill grate 108 may alternatively include small outer  
25       lip for grasping the outer reaches of top opening 107. In this manner, grate 108 functions to allow heat and potentially flame rising from universal unit 104 to extend

above top opening 107 for grilling, roasting, or warming.

In an alternative embodiment of the present invention, supporting ribs or members (not shown) may be sloped or otherwise shaped and adapted to aid centering burner unit 104 within grill body 103 and may additionally be formed to provide a snug and rattle-free retention of burner unit 104 further improving safety. While supporting ribs or members (not shown) are not required to achieve the goals of the present invention, they may be usefully and adaptively formed to project inwardly and therefore provide an air-gap layer minimizing thermal transfer, further improving a user safety.

Support member 102 is positioned below grill body 103, as shown and includes a bottom surface 112 spaced from a support surface by a plurality of feet members 105. A top surface of support member 102 functions as a receiving surface 111 for supporting grill body 103 as well as a other optionally included condiments (grilling items or drinks) or utensils (grilling utensils).

As previously noted above, it is also envisioned that the external surface of the assembly 100, grill body 103 and support member 102 may be shaped or molded into various pleasing forms in various colors, for example to replicate a brick/stone pattern, a floral pattern, a culturally selected pattern such as a Chinese-type grill or an South-Asian-type grill, or other desired form, depending upon a manufacturers determination. It is also envisioned, that the external surface of main body 103 may optionally include additional receptacles, drawers, sliding trays, vent slots, or means for containing items to be grilled, utensils or utensil containers and prevent them from shifting. Grill body 103 may also include gripping surfaces or handles (not shown) for lifting as an additional safety feature.

In the embodiment shown, support plate member 102 and grill body 103 are constructed from a ceramic material in a glazed or unglazed configuration. However,

it is envisioned that support plate member 102 and grill body 103 may be constructed from a variety of materials without departing from the scope and spirit of the present invention.

For example, while ceramics provide excellent thermal transfer resistance, the support member and possibly the grill body may be made from a selected thermoplastic enabling the desired ease of cleaning and movement while facilitating simple manufacture, color selection and determination. Alternatively, grill body 103 and support member 102 may be alternatively constructed from a variety of materials painted, enameled, or anodized metals, composite materials and other materials commonly used in the manufacture of rigid-shaped consumer products so long as the principals of safe and relatively simple construction are maintained. In this manner, the present invention secures consumer safety while ensuring a relatively low manufacturing cost.

As shown in Figs. 13 through 16, raised portions or surfaces 114 are formed and extend upward or project outwardly, from the region of a grill receptacle 113. Grill receptacle 113 is shaped as a recess for securing a bottom portion of grill body 103 from lateral shifting and may be readily adapted during manufacture to a variety of shapes capable of receiving adaptively shaped grill bodies 103. For example, (as noted above) where a rectilinear grill body 103 is employed, grill receptacle 113 is shaped in a rectilinear manner. As also noted above, where grill body 103 is formed as a generally frusto-conical shape, with a generally smaller bottom and a generally larger top, grill receptacle 113 would be correspondingly adapted to this shape.

Raised portions 114 project from receiving surface 111 of support member 102 and, in selected regions project forming a raised portion 116 having raised extensions 116A, 116B, 116C, and 116D as shown projecting outwardly toward outer rim 102A, effectively to generally divide receiving surface 111 (in this embodiment)



into a corresponding plurality of receptacles 117A, 117B, 117C, and 117D.

In the present embodiment, raised extensions 116A-116D form generally two elongated receptacles 117B, 117D and two other receptacles 117A, 117C of a generally shorter nature, as shown. As previously noted above, one benefit of the present positioning is that weight of the assembly 100 is centered for easy lifting and rotation as will be described. As will be discussed, alternative embodiments include non-centered designs and rotating and non-rotating supports, supports without feet, supports without receptacles or other adaptations depending upon consumer and manufacturer demand.

Recesses 105B (see Fig. 19) are formed on bottom surface 112 and are shaped to receive feet 105 during assembly. The recesses 105B provide a positive contact with feet 105 and operate in conjunction with feet 105 to protect assembly 100 and space assembly 100 and support plate member 102 from a support surface, further minimizing thermal transfer.

As above, and in the embodiment shown, support member 102 is slip cast from a ceramic material and alternatively may or may not include backside recesses (shown as 15, in the previous embodiment). The present embodiment does not include recesses and a manufacturing process may be modified to overcome any effects of their exclusion.

As noted above, those skilled in the art of plastic forming, ceramic slip casting, dry pressing, wood carving or metal forming will readily recognize the easy adaptability of the present design for support member 102 to adaptively include different designs for receptacles 117A-117D, raised portions 116A-116D, and other features discussed herein depending upon a manufacturer's or consumer's needs.

As also noted above, the present embodiment for support member 102 may be adapted to contain a wide variety of cooking, grilling, and/or cleaning utensils,

drink glasses and food items (noted above) or even adaptively shaped food and  
condiment containers. For example, receptacles for elongated containers for utensils  
or chocolate bars, and rounded containers for marsh mellow, vegetables, meats or  
other food items may be formed. Receptacles 117A-117D and 113 are shaped to  
5 prevent a shifting of a received item relative to support plate body 102 during use or  
transport, and thereby improve a safety of assembly 100. For example, receptacle  
113 prevents grill body 103 from shifting during transport and losing universal  
burner unit 4, preventing possible burns and property damage.

As noted above, the present embodiment may employ utensils 18, shown in  
10 Figs. 10A and 10B, or any other type of commonly employed grilling and cooking  
utensil in a manner effective to operate assembly 100 in a safe manner.

As briefly discussed, in each embodiment noted above a non-required but  
additional safety feature of the present invention, is that the present embodiments  
provide a continuous body substantially bounding an inner volume relative to  
15 respective burner units 4, 104. This design prevents lateral wind gusts, while  
allowing easy access and sufficient airflow during use. As noted previously, this  
design also prevents unintended contact with flame from the external fuel source  
contained within universal burner units 4, 104.

While the present invention does not require walls of grill body 3, 103 to be  
20 rigid, continuous, or function as wind blocks, the instant embodiments envision the  
benefit of such a design. For example, grill body 3, 103 may be simply a multi-piece  
metal support body formed for supporting a grill and receiving and securing  
universal burner unit 4, 104. However, the instant embodiments provide a double-  
guard to the flame through both the walls of units 4, 104 (with tops, bottoms, sides,  
25 and possible lids and air flow regulation means), and the rigid substantially  
continuous walls of grill bodies 3, 103. In this manner, the embodiments depicted

avoid flimsy wire construction, multiple holes or other design weaknesses previously available.

Alternative designs for support members 2, 102 are envisioned for multi-legged designs or designs having no feet or rounded shapes and requiring a cylindraceum (generally rounded shape) form. Alternative designs are further envisioned positioning receptacle 17A-17D and 117A-117D proximate an edge of support member 2, 102, or in multiple positions where a particularly large support member 2, 102 is employed. Although support members 2, 102 are shown in a round or rounded-square form, alternative shapes are envisioned including octagonal, rectangular, and amorphous free-form shapes more suitable for multiple users or the need for a wider support surface.

Grill grates 8, 108 are constructed from a suitable material capable of withstanding the thermal effects of grilling (while enabling simple cleaning after removal), providing a desirable appearance, allowing a rapid and inexpensive construction, and most importantly providing a safety feature or guard limiting unintentional access to heating elements (e.g., unless intentionally removed).

In the present embodiments, grates 8, 108 is constructed from ferrous or stainless steel wire, but may be alternatively constructed from another suitable metal, for example hardened aluminum or a combination of materials in alternative forms effective to achieve the same desired result. Grates 8, 108 may also be formed from a stamped material for even lower costs, using similar base materials where suitable for both a consumer and manufacturer. Finally grates 8, 108 may include an additional (fire resistant) non-stick coating allowing a user to conveniently place the grills into an automatic dishwasher for simple cleanup.

In sum, the present invention envisions multiple safety and convenience features not previously known while allowing for the use of adaptive designs

enabling alternative construction measures without departing from the spirit and scope of the present invention.

In the claims, means- or step-plus-function clauses are intended to cover the structures described or suggested herein as performing the recited function and not only structural equivalents but also equivalent structures. Thus, for example, although the present support members are shown having generally regular shapes, an amorphously shaped support member having similar function and receptacles should be recognized as within the scope of the present invention as an alternative embodiment readily understood by those skilled in the art as an equivalent structure.

Although only a single or a few exemplary embodiments of this invention have been described in detail above, those skilled in the art will readily appreciate that many modifications are possible based upon the exemplary embodiment(s) without materially departing from the novel scope, teachings, and advantages of this invention. Accordingly, all such modifications are intended to be included within the spirit and scope of this invention as defined in the appended claims.